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Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT

No. 251

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REPORT PREDICTS RUIN FOR TELECOM IF ITS MONOPOLY IS ENDED

Canberra THE AUSTRALIAN in English 1 Oct 82 p 3

[Text]

CHIEFS of Telecom Australia and a private telecommunications consortium were last night awaiting copies of a report which warns of dire consequences for Telecom if private enterprise is allowed to compete with it.

Telecom could lose \$120 million revenue a year if its monopoly on long-distance telephone services is lost, the study finds.

Senior management from Telecom and the Sydney-based Business Telecommunications Services group were hesitant last night about commenting on the study, conducted by British consultancy group, Logica Pty Ltd.

Commissioned by the Australian Telecommunications Employees Association, the study says open competition would cripple Telecom financially, forcing it to rely for survival on substantial government subsidies.

It warns also that ordinary subscribers, particularly in country areas, would be left with deteriorating services and soaring bills because competition would cut into the profits on lucrative services such as the Sydney-Melbourne STD link, with which Telecom subsidises uneconomic zones.

The study was commissioned in response to the Federal Government's setting up of

the Davidson Committee of Inquiry into Telecom, which many observers expect to recommend a private telephone "super-group" be allowed to compete with Telecom.

Challenge

The chairman of Telecom, Mr Robert Brack, would make no comment before studying the Logica report, a Telecom spokesman said in Melbourne last night.

In Sydney, a spokesman for the general manager of BTS, Mr Peter Holmes a Court, said BTS executives had not yet received copies of the report.

BTS was formed in 1980 by 12 major Australian companies to challenge Telecom's monopoly. But of the founding members only Mr Kerry Packer's publishing and broadcasting group, IBM, AMP, ACI and the Myer Emporium remain.

The major findings of the Logica study are that:

A PRIVATE telephone company could establish an extremely profitable business.

THIS development would severely damage Telecom, which would require "significant subsidies" to survive.

SIGNIFICANT increases in call charges would result. The cost of a local call would rise by 28 per cent, and STD calls by at least 17.5 per cent.

CSO: 5500/7510

GOVERNMENT REVIEW ON FAILURE OF INSAT-1A REPORTED

Press Agency Report

Calcutta THE SUNDAY STATESMAN in English 7 Nov 82 p 1

[Text] New Delhi, Nov 6--"Minor deficiencies" in the spacecraft and in ground control were responsible for the failure of the Indian National Satellite, INSAT-1A, reports UNI, quoting the Review Committee of the Government.

In its report to the Government, the committee, which went into the causes leading to the loss of "the spacecraft," however, expressed the opinion that the basic design of the spacecraft was sound.

The failure of the satellite on September 4 was due to "complex interplay of relatively minor spacecraft deficiencies," it said. There were also certain unforeseen events which under normal circumstances were extremely unlikely to cause a catastrophe.

The spacecraft having an undeployed solar sail had entered the eclipse season beginning August 31. The ground controller had prepared for the eclipse operations a few days earlier.

However, on September 4, some deficiencies in ground control software, lacunae in contingency operations procedures and unexpected onboard anomalies caused things to come to a head in about one hour and 16 minutes culminating in the spacecraft being shut down, the report said.

Narrating the sequence of incidents which led to the failure of the satellite, the report said earlier during the satellite's orbit raising sequence, the solar sail boom had failed to deploy.

On September 4, a modest yaw build up which had occurred on the spacecraft was being slowly removed by the spacecraft's autonomous control system. ("Yaw" in spacecraft's reference system is rotary motion about a line between the satellite and the centre of the earth).

The computer programme on the ground failed to predict the intrusion of the bright full moon, after the eclipse interval following the expected sun-intrusion, within the field of view of the spacecraft's earth sensor due to an inadequate data base.

Suitable modifications are being incorporated in the INSAT-1B spacecraft scheduled for launch by STS-8 in mid-1983, to preclude a recurrence of the INSAT-1A events. The most significant of these changes is the incorporation within the satellite of an automatic switch to omni-directional telemetry in the event of loss of earth pointing. In addition, the propellant isolation valve control circuitry has been modified to eliminate the possibility of unexpected valve status transfers.

These modifications are being incorporated in the INSAT-1B spacecraft which is currently being prepared for thermo-vacuum testing at Ford Aerospace's facility in Palo Alto.

In addition, minor design modifications on solar sail boom assembly and antenna deployment and tie-down arrangements to have already been implemented to avoid the recurrence of deployment anomalies experienced in INSAT-1A. Additional tests under near zero-G conditions have also been added to prove proper functioning of the modified deployment mechanisms.

Space Commission Chairman Comments

Bombay THE TIMES OF INDIA in English 8 Nov 82 p 18

[Text] New Delhi, November 7--Following the failure of the first INSAT spacecraft, the launching of the next one is being delayed with a view to taking corrective measures in the fabrication of INSAT-1B.

The second multi-purpose satellite was to have been launched by the space shuttle on July 4 next year, some 18 months after the launching of INSAT-1A.

A detailed review of the failure of the INSAT-1A presented to a parliamentary consultative committee yesterday brings out the fact that the ill-fated spacecraft was struck by not one but several failures. None of these failures is uncommon but what is not very common is a single spacecraft being subjected to multiple failures.

Prof S. Dhawan, chairman of the space commission, told the committee that a full review of INSAT failure was on and definite conclusions could be arrived at when the review was over.

Propellant Loss

However, a preliminary reconstruction of events indicated that propellant loss was most probably caused by the failure of an oxidiser latch valve to open when command was sent to support the spacecraft in the "safe" sun-acquisition mode.

Telemetry failure prevented timely recognition of the problem and, meanwhile, the automatic mode of thruster operation would appear to have drained away fuel. In the absence of oxidiser and hence of combustion in the thruster chambers, the fuel drained out faster than the normal rate.

The cause of orientation loss was not yet understood. It lost its orientation towards earth on September 4 following an abnormal drift around the north-south axis. This resulted in the loss of normal telemetry signals.

Earlier, soon after the launch, the C-band antenna and solar panel deployment posed problems. Despite several operations, the solar sail could not be deployed.

Thermal constraints resulting from non-deployment of the solar sail, however, affected the S-band TV transponder operation in terms of length of continuous operation and the obtaining of full-earth scan images every half hour throughout the day as originally envisaged.

Extra expenditure of on-board fuel during orbit-raising and station acquisition in final orbit and the additional on-orbit fuel expenditure resulting from the non-deployment of sail were estimated to have reduced the INSAT-1A life to about two and half years, less than half the normal span, even before the total failure of the spacecraft.

However, Prof Dhavan justified the basic design of the multi-function satellite and said that even a single-mission satellite could have faced such problems. The members were told that the "multi-mission requirements are sound and feasible and that the basic design of INSAT is sound."

The next INSAT is also being manufactured by the U.S. company, Ford Aerospace, which was the prime contractor for the first spacecraft. However, the spacecraft contractor also has interest in continued satisfactory operation of a satellite since part of payment is tied up with performance.

More Rice Procured This Year

New Delhi, November 7, (UNI)--Rice procurement has so far been better than last year's, with the total reaching 1.26 million tonnes.

The corresponding figure for last year was 1.14 million tonnes.

Punjab leads with a contribution of 1.08 million tonnes followed by Haryana with over 81,000 tonnes. The corresponding figures for the two states last year were one million tonnes and 64,000 tonnes, respectively.

Uttar Pradesh has so far procured 11,903 tonnes and Tamil Nadu 88,940 tonnes.

CSO: 5500/7030

INDIA

BRIEFS

GOA TV RELAY STATION--Panaji, November 5--The proposed Goa TV relay station is expected to have a range of 25 kilometres, according to Mr H.P. Bhatikar, chief engineer (western zone), All India Radio and Doordarshan. The people in the major towns like Mapuca, Margao and Ponda besides Panaji, will be able to view the relayed programmes. Mr Bhatikar has said that trial runs of the station have shown clear reception in the towns and surrounding areas. The areas on the fringes of the 25 km range may receive TV programmes with the aid of a booster. [Text] [Bombay THE TIMES OF INDIA in English 6 Nov 82 p 3]

TELEVISION NEW EXCHANGE--New Delhi, November 7--(UNI): India has taken the initiative for exchange of television news among the nations of the sub-continent. This proposal, aimed at correcting the imbalances in the information flow from the West has found favour with Pakistan, Sri Lanka, Iran and Bangladesh, according to Doordarshan authorities. Doordarshan hosted a meeting in Bombay recently to discuss the modalities of this scheme as exchange of news among these countries was negligible at present. It was decided that a co-ordinating central be set up either in India or Iran for preparing the news capsule for telecast in these countries. The news could also be exchanged through telex in the early part of the day. Doordarshan sources said the recording would be on video-cassettes. These would be prepared at the co-ordinating centre from material sent from all the five countries, including India. These cassettes would then be despatched by air to collaborating countries. The sources said it was for the Asia Pacific Broadcasting Union secretary-general, Mr Roko Ito, to decide where the co-ordinating centre should be located. This would be known only in January. [Text] [Bombay THE TIMES OF INDIA in English 8 Nov 82 p 4]

PORT BLAIR TV RELAY--A low-power TV relay centre will soon be set up at Port Blair. The centre will telecast Asiad 82 from November 19 with the help of INTELSAT. After the Asiad, other national programmes of the Delhi station will be relayed by this centre, according to a PIB announcement on Tuesday. [Text] [Calcutta THE STATESMAN in English 3 Nov 82 p 3]

CSO: 5500/7031

PLANS FOR HALF A MILLION NEW TELEPHONE CONNECTIONS

Karachi MORNING NEWS in English 15 Nov 82 p 6

[Text] The Federal Government proposes to install 5 lakh new telephone connections all over the country at a cost of Rs 14,000 million during the sixth Five-Year Plan period.

Official sources told PPI here yesterday that the main emphasis during the Five-Year Plan to be launched from July, 1983, would be to switch over to the electronic technology system.

They disclosed that three electronic imported telephone exchanges, each with a capacity of 10,000 lines, would be installed during the Five-Year Plan period at Karachi, Lahore and Islamabad. Contracts for the installations of these exchanges would be awarded soon to foreign companies of Europe, USA and Japan.

Pakistani engineers and technicians will also be trained in the electronic technology. A long-term plan for their training abroad has already been finalised.

These sources also stated that in the first year of the Five-Year Plan (1983-84) a total of 70,000 new telephone connections would be provided in the country.

Meanwhile, 6,000 new telephone connections have been provided in the Karachi tele-communication region during the first four months of the current financial year. In all, a total of 21,000 new connections are to be provided in the city during 1982-83 at a cost of Rs 420 million.

The Government these sources said, has also directed that the existing capacity of telephone exchanges in Karachi should be raised to 90 per cent.

At present, the installed capacity of exchanges in Karachi was 1.23 lakh whereas 1.4 lakh telephones are working.

Likewise steps are under way to achieve a load capacity of 90 per cent for the telex exchange in Karachi.

The installed capacity of telex exchange in the city is 2,000 and 1,575 telex machines are working one hundred new telex connections were given from July to October this year and another 125 will be provided during the next eight months.--PPI.

SPACE RESEARCH PROGRESS REVIEWED BY OFFICIAL

London ISLAMIC DEFENCE REVIEW in English Vol 7, No 3, 1982 pp 26-30

[Article by Salim Mehmud, chairman, Pakistan Space & Upper Atmosphere Research Commission]

[Text]

Pakistan Space & Upper Atmosphere Research Committee commonly known by the abbreviated name of SUPARCO, was established in 1961 for undertaking space research to promote peaceful exploration and applications of space science and technology in Pakistan. While pursuing this objective it is quite natural that SUPARCO's programmes would also contribute toward building up national scientific and technological potential. The principal applications programmes are aimed at bringing about socio-economic uplift of the masses. The thrust of these programmes is in the areas of satellite communications, satellite remote sensing and study of natural and physical phenomena in upper atmosphere and space.

SUPARCO's first project saw through setting up of a rocket launching station at Sonmiani Beach, about 50 kilometers North West of Karachi in early 1962. An imported two stage sounding rocket was launched from this range, on 7th June 1962, which achieved height of about 160 kms. Since that historical event SUPARCO has launched over 200 rockets to perform scientific experiments between altitude of 20 and 450 kms. A number of these experiments were conducted under joint programmes of SUPARCO and its counterpart agencies in the United States, France and the United Kingdom.

It was decided that Pakistan should have the capacity to manufacture rockets required by SUPARCO in its scientific research programme. This goal was realised and SUPARCO now operates a full-fledged rocket production plant which manufactures rockets starting with basic raw materials. Rockets produced at this Plant have soared to heights in excess of 500 kms. The Plant has facilities for manufacturing complete rocket engines, and their propellants. The rocket fabrication activities are supported by quality control and inspection at each and every crucial stage because of requirement of exacting standards of performance and safety. Not only this, complete rocket motor can be fired on a static test bench which holds it captive and the performance of the engine carefully monitored and recorded before the rocket is actually cleared for flight. Electronics plays an extremely vital role in space research — in fact no worth its name work in space science can be done without it. The electronic instrumentation is responsible for firing control of rockets, tracking of rockets during their flight, relay of data from rockets/satellite to ground and their control from ground. These are just a few of the items of long list of roles in which electronics is responsible for lifting space science and technology to new heights. Having fully realised the importance of electronics in space research, SUPARCO has established Instrumentation Laboratories which cover diversified fields of electronics such as microprocessors and digital circuit design, telemetry systems, control elements, satellite ground stations — just to name a few. On top of that, the equipment for use on board rockets has to be put through special environmental testing procedures to ensure that it will withstand the vibrations during rocket flight and extremes of space environment. The laboratories do have provision to perform those tests. In all there is a galaxy of latest and sophisticated electronic test, measuring and calibration equipment set in spacious and fully air-conditioned laboratory space to perform the high technology work by a dedicated team of highly qualified professionals.

The engineers of these laboratories have developed a number of electronic equipments like frequency counters, power supplies, time signal receivers, interface for transmission of digital information, a programmable digital controller etc.

Their current efforts are concentrated for the development of number of equipments for the satellite ground receiving stations. Already high gain dish antennas, pre-amplifier units, down converters and other circuit components have been developed. Using some of these sub-assemblies, a satellite ground receiving station has been assembled for reception of television programmes from direct broadcasting satellites (DBS). The inexpensive station will enable domestic TV receivers to directly receive T.V. programmes from D.B. Satellites. The station has now been trial running for several months and has given satisfactory service.

The launching of rockets is done from Sonmiani Beach overlooking the Arabian Sea. The range is spread over an area of 500 acres and has facilities required to conduct scientific rocket experiments. These facilities comprise different types of launchers, rocket assembly workshop, payload preparation area, high speed tracking radar and digital computer (for tracking of fast moving rockets in flight and charting of their flight path), rocket launching control room, telemetry station for receiving scientific data from rockets during their flight, communication equipment, optical cameras and maintenance workshops.

The Space Research Centre next to Karachi University has divided its activities into three main areas, namely:

(a) Planning of scientific rocket launching experiments and analysis and interpretation of data received through rocket launching experiments or different types of satellites.

(b) Ionospheric research.

This aims at the study and behaviour of electrons in the altitudes between 40 kms and 600 kms. The electrons at these altitudes form an 'umbrella' over the Earth. One of the important utility of this

electron umbrella is to reflect the shortwave radio signals to ground thus making long distance radio communications possible. The ground equipment used for ionospheric research detects even minor disturbances in the overall population density of electrons. These disturbances are mainly caused by the solar flares. When solar flares activity of sun is intense, the shortwave radio signals fade out or even at times are totally blacked out.

(c) Satellite remote sensing.

This area of activity concerns with collection of pictures of the Earth which are on a normal film and computer compatible tapes taken by the satellite based cameras and relayed to the ground stations. SUPARCO has necessary equipment to analyse and interpret these pictures for natural resources studies. Some of the completed studies relate to: morphology of Indus delta and adjoining coastal belt of Pakistan; identification of crops and estimation of acreage of different crops; snow survey in catchment areas of Indus basin rivers for estimation of water run-off; charting of river courses; mapping of areas under flood and localisation of weak spots of rivers giving rise to flooding; geology and minerology. The current projects are: extent of area under cotton crop and to see whether infestation can be detected; digital computer assisted mineral resources survey; water-logging and salinity studies etc. There are already 40 national agencies who are making use of the services offered by the Remote Sensing and Applications Centre.

SUPARCO has been put through complete reorganisation which was ordered by the President in December 1980. Through promulgation of Presidential Ordinance in 1981, SUPARCO is elevated to the status of a Commission. The work of the Commission is guided by the Space Research Council which is headed by the President himself. SUPARCO has drawn up a scheme of long term programmes of space science and technology which essentially stresses upon:

- (a) Establishment of ground receiving stations of different types to receive data from satellites
- (b) Installation of suitable equipment to track satellites, and
- (c) Launching of national communications satellites.

SUPARCO also has a project aimed at acquiring mobile equipment for monitoring of environmental pollution and ozone concentration using laser beam. The data thus collected will be correlated with data obtained from environmental pollution monitoring satellites. The existing facilities for analysis and interpretation of pictures of the Earth sent by satellites will be enhanced through the use of digital computer analyser equipment which will directly use picture information stored on computer compatible tapes for its input. The introduction of new equipment will greatly increase the flexibility, capability and speed of analysis work.

SUPARCO maintains regular liaison with its counterpart international space organisations. Pakistan is a Member of the Committee on Space Research (COSPAR) and the United Nations Committee on Exploration and Peaceful Uses of Outer Space. SUPARCO's experts represent Pakistan on these international bodies and have made significant contributions in the work of these bodies.

Since the areas of work in which SUPARCO is engaged are highly specialised, it is necessary that SUPARCO should have an inhouse specialist studies and training institute for its scientists and engineers. SUPARCO is in the process of preparing a detailed project proposal for establishment of an Aerospace Institute at the Campus of Space and Atmospheric Research Centre near Karachi University. This Institute will provide facilities for induction of large number of scientists and engineers for training and higher studies in aerospace technology. As an interim measure regular courses

are being conducted at SUPARCO's Instrumentation Laboratories Orientation Training Centre for all the newly inducted scientists and engineers. The course work imparts theoretical and practical instructions in various disciplines of space science and technology and extends upto 9 months. Those of the scientists and engineers who are extra bright and it is necessary that they be trained abroad for a specific project are placed in foreign universities/training establishments of repute.

National space science and technology programmes in developing countries are no more a luxury but a necessity. Not to make use of spin off benefits of space technology would tantamount to ignoring powerful techniques which can assist these countries in their socio-economic uplift. The work which SUPARCO is undertaking would have a direct bearing in improving the quality of life of people of Pakistan. As an added bonus and of great significance too SUPARCO's activities should contribute toward rekindling the interest of young Pakistanis in science and technology and provide facilities for them to carry on with their scientific pursuits once they have finished their formal education. The spin offs of space technology are already impinging upon our daily lives in multiple ways: satellite T.V. and telephone service, pocket calculators, microcomputers, digital watches, intricate medical diagnostic aids, detection and better management of natural resources are just a few examples. There is therefore a strong case for promoting peaceful applications of space science and technology in Pakistan. SUPARCO after its reorganisation is making good progress in moving toward that end. With the legitimacy given to SUPARCO, for the first time since its creation in 1961, through promulgation of Presidential Ordinance in 1981, and support from the highest level of the Government, SUPARCO should be able to realise its aims and objects and truly stand for advancement of science and technology in Pakistan.

PAKISTAN TO JOIN POOL

Islamabad THE MUSLIM in English 8 Nov 82 p 4

[Text]

NEW DELHI, Nov. 7: India and four other Asian countries will exchange television programmes on videotape cassettes from February, according to officials at "Doordarshan", the Indian television network.

They identified Pakistan, Iran, Bangladesh and Sri Lanka as the other countries participating in the project.

The exchange programme would initially be carried out on an experimental basis for six weeks, the officials said. It was designed to ensure proper projection of regional events in each of the five countries and to enable them to exchange developmental news.

The video cassettes would be air-freighted.

The officials said a co-ordi-

nating centre for the project would be set up in January, after the Asia-Pacific Broadcasting Union had agreed on its location.

Representatives from the five participating countries held informal discussions regarding the project in Bombay last week.

Meanwhile the five ASEAN countries—Thailand, Indonesia, Philippines, Singapore and Malaysia—have undertaken a similar venture with the help of "Palapa", the Indonesian satellite.

At a later stage, all the broadcasting unions in the world are expected to enter into an agreement to lease some channels of the Intelsat for exchange of programmes among the member countries, according to Doordarshan officials.—PTI

CSO: 5500/4310

BRIEFS

FAULTY TELEX SYSTEM--SIALKOT, Nov 7--The Secretary General of the Sialkot Advisory Committee on Telecommunication, Mr. Imtiaz Elahi, expressed concern over the everyday breakdown in the telephone and telex system here. He accused the local telephone authorities for laying cables in improper way. He said that it had added to the difficulties of the subscribers who already have the problems of wrong billing. He said that the telex subscribers were paying Rs. 2500 as monthly rent but most of the time telex system seems to remain dead for the last two months. Thus the people were facing great problems and heavy losses in the absence of the telex. [Karachi DAWN in English 8 Nov 82 p 4]

IMPORTANT RESEARCH ACHIEVEMENT REPORTED--ISLAMABAD, Nov. 7--A research team of the Physics Department, Quaid-e-Azam University led by Dr. M. Zafar Iqbal has produced a 'single crystal of Germanium', a heavy semi-conductor material on November 1 for the first time in this country. This scientific work signals an important landmark in as much as the single-crystal semiconductor materials form the basis for the vast variety of electronic devices such as the transistors, micro-chips integrated circuits and solar cells etc, which are today playing a basic role in the process of industrialisation. This achievement marks the beginning of a fruitful collaboration between the Semiconductor Physics research team of Quaid-i-Azam University and a possible electronic device manufacturer of tomorrow in Pakistan, namely the Central Telecommunications Research Laboratories which could use this capability of indigenously fulfil the future needs of the telecommunication systems of the country. Other organisations such as the National Institute of Electronics, Fauji Foundation Micro-electronics Project and the Carrier telephone Industries may also benefit from this development in future. The single crystal has been given a beautiful vase-like shape and weighs over half a kilogram with a length of more than four inches. The top portion displays hexagonal crystalline symmetry and has a maximum width of over two inches. Two M. Phil level research students have also been trained during this work. [Islamabad THE MUSLIM in English 8 Nov 82 p 3]

CSO: 5500/4310

BRIEFS

DENIYAYA STATION BEGINS FM STEREO BROADCASTING--The Sri Lanka Broadcasting corporation started transmitting FM stereo from its Deniyaya station on October 21 and its first program from this station was the presidential election results. This new channel will cover Galle, Matara and Tangalla districts. Earlier, listeners in these areas were not able to receive FM stereo transmitting, said the chairman, Mr. Eamon Kariyakarawana. The new service was introduced when the stereo transmissions from Radella and Colombo proved successful. [Colombo DAILY NEWS in English 30 Oct 82 p 1]

CSO: 5500/4311

BRIEFS

NEW TELEPHONE-TELEX NETWORK--A new 1,260-channel telex and telephone network joining the cities of Cordoba and Mendoza will be dedicated on 17 November. [PY212346 Buenos Aires Domestic Service in Spanish 2000 GMT 16 Nov 82]

RADIO STATIONS AUTHORIZED--Buenos Aires, 9 Nov (NA)--The executive branch has granted the firm Desup S.R.L. headed by Adolfo Antonio Critto, Hernando Campos Menendez and Virgilio Alberto Tedin Uriburu, permission to operate LR9 radio Antartida of Buenos Aires. The executive branch also granted the firm Dimension Integral de Radiodifusion S.R.L. permission to install and operate a radio station in San Luis. This firm is headed by Eduardo Alberto Cometto and Iri Elvira Torrado de Cometto. [PY111321 Buenos Aires Noticias Argentinas in Spanish 2115 GMT 9 Nov 82] Buenos Aires, 2 Nov (DYN)--The executive branch has authorized Radioifusora del Nordeste S.A. to install a radio station in Resistencia, Chaco Province. [PY111321 Buenos Aires NOTICIAS ARGENTINAS in Spanish 1548 GMT 2 Nov 82]

CSO: 5500/2018

SENATOR CALLS FOR GOVERNMENT TAKEOVER OF COMMUNICATIONS

Bridgetown THE NATION in English 4 Nov 82 p 16

[Text]

GOVERNMENT, at some point in the future, should consider taking over its external communications system.

This suggestion was made in the Senate yesterday by Government Senator John Williams in his contribution to the debate on the bill amending the Barbados Telephone Company Act.

Williams declared that it was "tremendously expensive" to operate a communications service such as that provided by Cable and Wireless and he noted that the previous Democratic Labour Government, on examination of the matter had decided not to go ahead with such a move because of the cost of operating the system and keeping up with the rapid changes in technology.

He said that the present Government had not considered such a takeover bid, but, in his opinion, such a move was one that "should be looked at in the future".

Williams said that after a number of discussions with Government, Cable and Wireless had agreed, about a year ago, to produce financial statements reflecting its operations in Bar-

bados, quite separate from its operations in the rest of the region.

On the suggestion from Senator Wendell McClean that Cable and Wireless should be brought before the Public Utilities Board (PUB) to explain how it fixed rates of overseas communications links, Williams said "it might not be a bad thing".

He declared that such a move might soon be necessary if the British-based multinational corporation could not agree with the Barbados Government and the telephone company on a greater than 40 percent share of revenue, for the telephone company, from overseas phone calls.

Williams said that, in this matter, Cable and Wireless was willing to have a third party look into the matter, but the suggestion was not taken up.

On the question of local phone services, he stated that the introduction of a "timed" service would penalise those persons who "misused and abused" the telephone, but benefit others who hardly used their phones.

"There should be some system reflecting light and heavy usage," Williams said.

CSO: 5500/7513

BRIEFS

NEW PHONE EXCHANGES--THREE new telephone exchanges at San Juan, Diego Martin and St. Augustine will be commissioned next month by the Trinidad and Tobago Telephone Company. This was revealed by Senator John Eckstein, Minister of Public Utilities and National Transportation at the ninth annual long service and achievement awards ceremony of the Telephone company on Saturday night at the Trinidad Hilton Hotel. Senator Eckstein told the gathering that within the past 12 months, the telephone company had commissioned exchanges at Couva, Piarco, San Fernando, Chaguanas and Maraval. In addition, he said, just one week from now a second tandem switch would be put into service at Nelson Exchange to improve the quality of service to all existing subscribers and would also give the company the capacity to expand its subscribers base. The minister said he had been assured by the management that with the commissioning of the new tandem switch the company would be able to provide an additional 5,000 subscribers with service before the end of 1982. He added that this figure would be augmented by another 30,000 in 1983. [Port-of-Spain TRINIDAD GUARDIAN in English 25 Oct 82 p 1]

CSO: 5500/7511

RADIO STATION FOR THE MAGHREB REVIEWED

Paris LE MONDE in French 9 Nov 82 p 19

[Article by Annick Cojean: "Medi-1 in Tangiers--A Different Kind of Radio for the Maghreb"]

[Text] Radio Mediterranee Internationale, the fruit of financial and technical cooperation between France and Morocco, is going to abandon the medium waves on which it has been broadcasting since September 1980 and, starting on 15 November, go into the long waves (1,740 m). It will thus cover not only all of Moroccan territory but also Algeria, Tunisia, even part of Libya and Mauritania, as well as a bit of Spain and perhaps as far as Toulouse. An indisputable success for this young radio station which, on an annual budget of Fr 11 million for 17.5 hours of broadcasting per day, is already achieving listener rates ranging from 30 to 80 percent in the north of Morocco.

Tangiers (from our special correspondent)--when the fall of evening gives Tangiers the bluish and magical colors of nearly oriental cities, when Place du Grand-Soko becomes that strange place of rendezvous, exchanges and roguery that have made it world-famous, when the cafes fill and the kef pipes are already going from hand to hand, a noise arises, crescendo, of human voices, of children's shouts, of hollow beats on bendirs and tom-toms, a sound both intoxicating and frightening. The sounds meld, the noises mix together, and the medina with its swarming little streets becomes the intimate labyrinth in which the games of commerce and the interminable palavers around boiling tea defy the western norms.

Nevertheless, a voice imposes itself over this tumult--an elf with a thousand faces that falls silent only to resume farther on, disappears, reappears and calls out as many "peek-a-boos!" as there are crackling transistor radios in the entire medina. Thus the voice of Barbara infiltrates gently into the city, and with it, those of Djurdjura, Pink Floyd, Ray Charles, Trenet and Djamel Alam.

Cassettes, such as the small peddlers offer at the price of a metro ticket? Not at all. It is radio--and not ordinary radio. It permits itself to be so

bold as to play an Arabic-language record and then comment on it in French, to read an ad in Arabic and then sign off in French. Installed in Morocco since 2 years ago, it has garnered between 5 and 6 million listeners and has taken hold in the cities of northern Morocco. Its name? Medi-1, or Radio Mediterranee Internationale. An amazing wager, proposed by King Hassan II to the French president of the time, Giscard d'Estaing, and taken up by a pugnacious Corsican, Pierre Casalta, at the head of a team more Moroccan than French.

"I would like a radio station of international character, run by professionals who would read their texts into the microphones themselves," King Hassan II said to the man who had just been assigned from Radio Monte Carlo, to conceive and launch this radio station in which no one really believed. "Banco!" replied Mr Casalta, assured of the sovereign's confidence and total freedom of maneuver.

Medi-1 thus started up in September 1980, using the old Radio Tangiers transmitter and with a Franco-Moroccan structure: 51 percent of the shares belong to Moroccan state enterprises and 49 percent to French interests--more than half of it to SOFIRAD [expansion unknown]. Very few personnel, but with the will to train personnel gradually "on the spot." But in particular, an original "music and news" formula adapted to the slogan "one voice, two languages": permanent bilingualism.

Some would have preferred to cut the broadcasting into French-language segments and Arabic-language segments," explains Pierre Casalta. "We opted for the mixture such as the Moroccans use every day, speaking French and Arabic alternately, borrowing from the former the model expressions or inventive language sometimes lacking in the latter." A happy marriage, in any case. The two languages are closely linked in the broadcasting, and the broadcasters--all Moroccans--pass from one to the other naturally.

"Without Modesty or Taking Sides"

This same brew is found in the musical programming, born of the encounter of two cultures, the French and the Moroccan, in which the Anglo-Saxon cousin inevitably takes part.

Music, essentially (3,000 albums and no dependence on the record companies which ignore the Maghreb market); several popular broadcasts, such as "Chain of Friendship," or the program devoted the listeners' poems, that bring the station a surprising volume of mail--as much as 7,000 letters per month, some from Algeria, others from throughout Morocco, sometimes recognizable by the ink and paper when a public scribe in a small village of the Haut-Atlas writes some 10 of them, at the request of isolated shepherds.

And then news. Wasn't it Medi-1 that was the first in the Maghreb to be able to announce the death of King Khaled of Saudi Arabia, then that of President Sadat, and more recently, that of Bashir Gemayel? And who, if not Medi-1, provided daily coverage of the events in Lebanon, daring to talk, day after day, of the surrender of the Palestinians, the international reactions, the Israelis' advantage, despite the silence or contradictory information put out by the Moroccan public-service radio stations?

"A shock treatment for the population, a breath of fresh air for the listeners cut off from all credible information about external events," the journalists consider. "For the first time," Mr Audelkader Chabih, in charge of Arabic-language writing for the station and a former journalist with the national daily press assures, "rigorous information, without modesty or taking of sides, appeared in the country. We would deliver the raw facts, with no other ambition than to inform, and without slipping into our talk the inevitable message that the other radio stations, whatever their origin, try to impose on us. No need for commentary or editorializing. These are often only pleonasms. The listener is intelligent. The facts speak for themselves."

A statement just for the visitor? Not only so, even if the 77 employees of Medi-1 obviously try to communicate their enthusiasm at all costs. But the station is there, which illustrates and confirms Mr Chabih's remarks. Three-voice news broadcasts, done by two teams (the Arabic-speaking and the French-speaking); a fast, nervous pace; a professional tone--contrary to the solemn and partisan rivers of news broadcasts from the stations of the RTM (Moroccan Radio and Television), conforming with the national daily press in a hundred ways, and finally, to the great displeasure of the important lobbies in the country.

"It has been necessary to get the listener used to calling everything by its right name again," explains Jean-Robert Cherfils, news official. "Thus the 'mercenaries' of the Polisario Front have become the 'Polisario Front' again; Pretoria's 'racist regime' is called, more soberly, 'the Pretoria regime'; no more systematic use of 'Zionist' preceding the name of Prime Minister Begin, or 'sellout' to describe the regime of Chile." This is relatively audacious, but its fallout has not been long in coming.

A Certain Self-Censorship

"Medi-1? A Zionist propaganda post," some have cried; "a subsidiary of Radio Israel," others have shouted. Among them are the very same persons who, a year ago, curiously modified their language or their coverage of international events. Let Medi-1 mention executions in Iran and the Moslem Brotherhood of Tangiers threatens to "cut down all the journalists one by one." Let it report the encirclement of the PLO leadership in Beirut and the Istiqlal press denounces the "challenge to the Moroccan people." The station's journalists wish to ignore such criticisms, convinced that the recent coverage of the Lebanese conflict rallied many listeners to them.

Are the valiant journalists of Medi-1 fearless and above reproach? And is the sky of the editorial staffs of the purest blue? For audacity, insolence, stone-throwing stop at the gates of Morocco. Curious eyes, yes, but eyes that preferred to see nothing of the events of Casablanca, waiting to know whether those events were going to go beyond the 48-hour threshold; practiced ears, doubtlessly, but ears that prefer not to hear too much disobliging news about their close Algerian or Saudi neighbors. But since you are repeatedly told that Medi-1 is a radio station of an international character!

Certain members of the editorial staff implicitly admit a certain self-censorship, while at the same time rejoicing in the privilege of working on "the

freest radio station in the Maghreb." The officials, for their part, consider that they have never had reason to complain of any pressures from Rabat and assert that Medi-1 has never passed in silence over an important event coming under its competence. The notion of "international news" remains to be defined precisely, unless this obligatory prudence about everything that relates to the countries of the Maghreb is the price to be paid for maintenance of this tool-- in short, for maintenance of quality.

This is all the more crucial a question today because by increasing its potential listenership considerably, the station also multiplies the stakes. And in the big white house right in the middle of Tangiers that houses the studios and the "Medi-1 family," there is already no question any longer except this change of amplitude (of scope). Some dream of permanent programs or correspondents; others, of advertising strategies. Receipts covered 30 percent of the budget in 1982, and some consider that an international system should make it possible to balance the accounts by 3 years from now.

"Mission accomplished," Pierre Casalta, pleased with the public's reactions, therefore seems to think today. He is especially pleased with the reactions of his team. "There were 14 of us French at the start, and now there are only 7 of us, and that is so much the better. We have got a spirit going, we have trained people in the techniques of radio, and we have transmitted what we know. Medi-1, through the voice of the Moroccans, gives today a credible image of France to the outside."

11267

CSO: 5500/4601

TELEPHONE SERVICES IN LATAKIA PROVINCE EXAMINED

Damascus AL-EA'TH in Arabic 15 Oct 82 p 5

[Article by Zuhayr Jabbur: "What Is the Phone Service Situation in Latakia Province?"]

[Text] Latakia Province continued to use handcranked telephones until 1950 when Posts and Telegraph was tied into the Ministry of Communications. Hence modern communications began to play their role in our society so that now one of the everyday things in our lives is the word "Hello" which we say dozens of times a day. The Latakia directorate now has 883 workers.

Breakdown of the Network

The province has made big jumps in expansion during 1981-1982 because the number of subscribers was 8,500 in 1980 and in less than 2 years has risen to 14,800. The network is broken down into three centers: Latakia includes 2,000 telephone numbers, al-Qardahah 3,000 and Jablah 4,000. In addition the telephone centers link the subdistricts and villages with the main exchanges in the city of Latakia by 26 cables and 25,000 lines between the new and old areas of the networks which have not yet reached the following districts: Qaninas, Da'tur Basnada, Damsarkhu, Hayy al-'Ad'idin, al-Shaykh Dahir and Mar Niqula.

At the beginning of 1983, according to telephone sources, these areas will be provided with the new network and we will complete the city link and the digging work which is being carried out now by the Syrian Networks Company in order to finish the final phases of the work. We hope that the company will not allow the dirt to stay as it is because it hurts the appearance of the city. Before getting to the heart of the matter, we should take a brief look at the directorate which faltered several years ago, each successive set of managers having added new mistakes to old ones and then departed. Therefore, voices and complaints and, at times, even shouts have been heard. In 1981 when the expansion campaign was just starting, Eng Amin Shakhis was appointed director of telephones in Latakia. What has been accomplished so far and has he been able to deal with the accumulated mistakes?

There are currently 37,000 unfilled orders for telephones. Given our available capacities, we can provide 15,000 lines by 1985 in priority order, including departments of the government, official establishments and exceptional requests.

The crisis will continue despite our efforts because the telephone density has begun to rise and will continue with the directorate's efforts. The general organization is making the necessary studies to end the crisis and we can state that all problems will be resolved by 1999.

Outages

After getting acquainted with the status of the directorate and a breakdown of its networks, we should touch upon our local sore points: outages, outages, outages. The word outage is on the lips of every subscriber in the first exchange which comprises, 6,411 main lines and 785 secondary lines and which recorded 896 outages in the month of September.

The second exchange includes 9,132 main and 875 secondary lines and recorded 1,500 outages in the same month. This exchange serves Tuq al-Balad.

The rainy season is not yet at its peak and it is well known that outages hit record numbers during the rainy season. A list of outages reaches the office of the director each day and he reads it to find out what has been taken care of. The director finds that the faulty lines concentrated in the Tuq al-Balad areas running for long distances in the air cause repeated outages because the extension technically should not be more than 200 meters only while the troublesome lines stretch over distances of 1-2 kilometers. Winter outages come from moisture. Other organizations, such as water and electricity (qasiun) do a lot of digging. In summer, the dryness keeps the cables from getting wet, keeping in mind that half the network is insulated by cardboard. The above organizations do not notify the directorate before digging and the faults are discovered in the winter after the digging has been filled in, thus forcing us to redo the digging to effect repairs.

Internal faults take no more than 12 hours to repair, external aerial line faults will take 48 hours and underground cable outages could take more than a week at times, subject to discovery of the source of the outage, particularly in the heart of the eastern city, the villages of Sanjawan and Saqubin, and Maktab al-Dur and the surrounding area.

941-942-943

You pick up the phone and dial one of the numbers:

"Good Morning:

"Yes." (rudely)

"I want to place a call to Damascus."

"Damascus is out of order."

You hang up and try again.

"There will be a 7-hour wait."

You are disappointed and feel that you are unlucky in your dealing with the telephone company. You try the automatic dialing, the lines get crossed and you get a busy signal which you find useless. Does this happen?

The question was posed to people in Latakia Province and the answer was yes. I will pass on the causes which you may find convincing as was done with me. The pressure on the communications lines among the provinces is not necessary and prolonged conversations cause backlogs. Each of us must be as brief as possible. The most important thing is the attitude of the workers because they play a fundamental role in the operation. Who are they?

Exchange Workers

They are primarily people like us with their own private and public circumstances who are subject to psychological factors and illness and who work by means of [apparent omission].

You depend on their verbal ability. Every day they have to respond to thousands of conversations incoming and outgoing. They have to deal with diverse personalities and psychologies. They have their own quarrels: The Damascus operator wants the line, the Tartus operator has it, the Latakia operator gets upset and often we hear, "Damascus...Hello...."

And so it goes in the jargon of the profession. The other end does not answer and the whirlpool goes on. A person leaves with the sound of jangling telephone bells and the words in his head. This is in addition to the modest pay, nonexistent production incentives and difficult working conditions.

Coaxial Cable

It runs between Latakia and Damascus and is prey to outages from vandalism, farm plowing, heavy truck traffic, etc. Its function is to link the provinces all along its length.

Peak business in automatic dialing is from 0900 to 1500 and from 1700 to 2000 hours.

The dialing system operates under tremendous pressure which can be lessened after the coaxial cable lines are increased by the end of 1983.

The dialing system, as any operation, is subject to outages at times. It should be mentioned that the project has not been handed over once and for all because there are some technical shortfalls which the contracting company has not yet remedied.

The international line can get any number of most Arab countries, Europe and American because of the paucity of communications with those countries.
[as published]

In this connection, the directorate has dedicated a number (23055) to receive complaints about external calls.

Information

The status of external communications may have convinced you after learning the primary causes. This is what prompts us to ask the usual question: What next?

There are more practical steps which will be taken in the future, including increased coaxial cable lines, as the director stated.

Information is a very important service. It is the number "95" which, in fact, is 12 lines to receive and answer calls.

This service has gone down hill recently. After a lengthy wait 95 may or may not answer and often gives you wrong or very old information.

In recent times, lines have been replaced and new numbers provided and this has put the information function in an unstable state, resulting in poor information. To remedy this situation the local telephone directory is now under preparation.

Information can play its service role, particularly after the lines situation stabilizes. We should add a short observation about the publication of names in the directory: There are those people, about 15 percent, who do not want this done.

Paying Bills

Receipts, excess conversations, automatic answering tapes and external conversations are all forwarded to the computer department in Damascus to be redistributed in the manner used in all provinces.

The organization is now laying out a plan to catch past due bills wherein the amounts due must be paid within 3 months at the most after the end of the billing cycle.

People can notify the directorate about errors in bills, from a dubious number to external calls, through an official protest which will cause the bill to be checked.

A reference has to be made to the 50 percent rise in prices for local calls. Excess charges have dropped from 1,000 to 800 and the average international call now runs 25 Syrian pounds per minute. This increase started at the beginning of 1981. The province is currently paying the third cycle of that year. People must confirm information before protesting.

Rotation

Every 5 hours, the exchange and information workers rotate and this can interfere with operations at times since no one may answer a caller for a long time. Also, some requested numbers may be ignored or an external call may end and there is no one available to disconnect the line for the subscriber. In fact, all these petty things fall within the framework of work and they can be

remedied by proper supervision. Again, we should appreciate the conditions of the workers. Sometimes the delay may be because of communications or a case of illness about which management was not notified or done on purpose to have a cup of tea or to talk with a colleague or to sing along with a song. Such cases have plagued management without exception: everyone who doesn't bother to answer or those who have left work without waiting for their replacement.

Rural Services

They comprise radio and landline and compatible communications, all linked with major centers in Latakia, Jablah and al-Qardahah. The rural areas have seen a qualitative jump during past years, the number of subscribers having increased by 300 percent over the 1980 figure.

Most subdistricts are linked with the centers and manually operated lines have been replaced. A subscriber can ask for a number without 941.

Rural projects are part of the 5-year plan, covering many villages. The coming year will see a great improvement.

Telegraph

The directorate asks people who want access to a telex to get in touch with it to take care of the request because the capabilities are available since the new exchange has been installed and put into service.

Difficulties

As is the case with all quarters which deal with large masses of people, the telephone sector has its own special and general problems.

The priority of calls may pose a problem. The citizen must recognize fully that he has his rights but priorities play an important role. Calls involving the public situation, whether economic, industrial, commercial, agricultural, etc., are given attention and cannot be compared with routine calls. Even repair and maintenance operations are subject to these conditions and among numbers requiring repair, expeditious treatment must be given to putting numbers involving the public interest into operation. The citizen must cooperate with the directorate to improve service and other organizations of the province must do as much as possible to notify the directorate at once of any actions involving the cables.

Some quarters try to conceal the location of the cut or damage to the cable to avoid bearing the responsibility.

According to my information, the governor is constantly stressing this work and expressing concern with the objective of having quarters involved in digging and earthwork cooperate.

Will those quarters respect the wishes of the highest responsible authority in the province?

It is an ethical issue determined by the quality of management and how disciplined it is and how much it respects itself first of all.

If (qasiun) fills in dirt and then the electricity authority does some digging and then the municipality fills it in and then the water authority does some digging, this constitutes a problem that must be stopped in some manner.

Internally, the directorate faces the problem of a shortage of technical expertise and staff and an imbalance between the amount of work and the nature of the expansion.

The cause of this is that people do not take jobs because of low pay and the lack of production incentives.

The directorate has only four pickup trucks for the maintenance workshops, a very small number if compared with the daily workload of the repair and maintenance workshops.

Communications services are constantly improving. Through the interest of the political leadership in the country, this sort of service has been given major importance because it plays a social and economic role. Linking the country internationally and the completion of the automatic dialing project internally can perhaps serve to confirm that.

Since plans are underway and capabilities are being devoted to accomplishing the improvement work, we should hold off a bit because the projects which have been proposed will put our country in first place in its communications methods of all international and local types.

8389

CSO: 5500/4505

LTC OFFICIAL NOTES PROBLEMS FACING CORPORATION

Monrovia NEW LIBERIAN in English 26 Oct 82 p 8

[Article by Rufus M. Darpoh]

[Text] Mr. Gargard stated that it was about time LTC and LEC (Liberia Electricity Corporation) got together and worked out a mutual agreement on the usage of telephone and electric poles.

He said that most of the high poles are owned by LEC and if an agreement was worked out, distances between telephone lines and electric wires would be maintained for the convenience of both agencies.

RURAL AREAS

Touching on telephone service in rural areas, Mr. Gargard noted that the major problem is lack of commercial power in those areas: He said there should be at least two generators at most sites so that if one is in operation, the other would serve as a standby unit.

He noted, however, that cost in diesel fuel consumption is heavy. He said sites most affected by good telephone service are Cape Palmas, Greenville, Voinjama, Zorzor, and Gbarnga.

Another problem, Mr.

Gargard cited, is that at the time the outstations were being planned, the fast growth rate of the areas were not taken into account, and now the populations are growing faster than anticipated.

For this reason, when many people are using the trunk lines, it is difficult to get good service from the rural areas. When this happens, people think there is a breakdown in the telephone system, Mr. Gargard explained.

To solve this problem, LTC, he said, has submitted a program to the Minister of Post and Telecommunications to increase communication service in the rural areas. If the program is accepted and implemented, the telephone service would be enhanced, Mr. Gargard asserted.

10-YEAR PLAN

Meanwhile, there is an overall ten-year plan to improve telephone, cable, transmission lines, switch-

ing centers, and international exchanges which will complement PANAFTEL (Pan-African Telecommunications) network.

The LTC Deputy Managing Director for Operations revealed that the plan which will cost \$26 million to implement, had been submitted to the Ministry of Planning for consideration.

He stated with pride that there are now qualified engineers at LTC to solve the problem. "What is needed is money and support, especially from subscribers who have not been paying their bills," he added.

With regard to satellite, Mr. Gargard said it was put into operation in 1976 with 36 non-standard channels. Today, it is Standard B with SCPC (Single Channel Per Carrier) equipment having 60 channels.

He said this makes it possible for LTC to communicate with all parts of the world by telephone. He added that it was because of this that LTC was able to telecast some important events connected with Head of State Doe's recent visit to the United States.

LTC indeed has come a long way. With the necessary support from the government and subscribers, it can improve the telephone system in the country. As Mr. Gargard noted, there are now qualified engineers to handle the job.

BRIEFS

MANUAL TELEPHONE EXCHANGES INSTALLED--Two manual telephone exchanges valued at 8,215,000/- have been installed at Peramiho and Tunduru areas in Ruvuma region. A statement issued by the Tanzania Posts and Telecommunications Corporation said that the Tunduru exchange valued at 7,925,000/- is connected to Songea by a 60 channel Ultra-High-Frequency (UHF) radio system. The exchange already has 120 subscribers and provides 12 hour service daily from 8.00 am to 8.00 pm including public holidays. The Peramiho exchange has Very High Frequency (VHF) radio system with the capacity of 80 lines, 35 of which are already working. The exchange is valued at 290,000/-. The hours of service for the exchange are from 7.30 am to 12.30 noon and 2.00 pm to 4.30 pm from Monday to Friday. [Text] [Dar es Salaam DAILY NEWS in English 30 Oct 82 p 3]

CSO: 5500/44

ZAIRE

BRIEFS

NEW TELEVISION TRANSMITTER--Kinshasa, 15 Nov (AZAP)—On Monday, at the Binza Transmitting Center, state commissioner for information, culture and arts citizen Kande Dzambulate commissioned the new 10 kw television transmitter of the Zairian Radio and Television Corporation, donated by the French Government, announced the Voice of Zaire in its new bulletin at 1900. [Excerpt] [AB161247 Kinshasa AZAP in French 1150 GMT 15 Nov 82]

CSO: 5500/45

NORDIC MOBILE TELEPHONE SYSTEM GAINING SUBSCRIBERS

Oslo AFTENPOSTEN in Norwegian 27 Oct 82 p 10

[Article by Erik Bjørnskau: "Nordic Mobile Telephone Prepares for 90's"]

[Text] When Nordic Mobile Telephone (NMT) was introduced in Norway a year ago specialists agreed that now we had obtained the most advanced equipment in the world for mobile telephony. But in spite of record interest it is possible all the same to record--as for all technical innovations--individual childhood illnesses.

NMT has today more than 9000 subscribers; rapid development in only a year and a quadrupling since the new year. Nordic Mobile Telephone was developed by the Telecommunications Service in cooperation with the telecommunications administrations in Sweden, Denmark and Finland. It is a totally digitalized system which makes it possible not only to call from its mobile set but to call directly without going through an exchange, and to over 100 countries worldwide. In addition, a telephone subscriber can call a mobile telephone within the Scandinavian area of coverage without knowing where it is located, something the traditional VHF and UHF systems cannot offer. As of this summer utilization capacities have been expanded mutually for subscribers in the four Scandinavian countries.

The earlier independent UHF and VHF mobile mobile telephonics which represent "classical" mobile telephony, are therefore on the way out and the Telecommunications Service counts on their being liquidated during the 80's. Now there are a total of 40,000 mobile telephone subscribers in Norway, a very large number, relatively speaking, on the world scale, Information Chief Christian Bugge Hjorth at the Telecommunications Directorate reports to AFTENPOSTEN.

But in spite of the fact that the Telecommunications Service has now launched the newest of the new, a Scandinavian work group is already in the process of dealing with the possibilities, prerequisites and need for a next-generation radio communications system for mobile services, which will be able to supplement the NMT beginning in the 90's, Bugge Hjorth is able to relate.

When individual subscribers can point to problems with the NMT it is not because the electronics have not been mastered. The system is in principle a radio service but the new thing is that it is completely automatic, says Telecommunications Directorate First Adviser Ivar Sliper, and even the signals in the NMT system are dependent on a free line to a so-called base station which relays them further.

The Telecommunications Service has set up these base stations at a number of places in east Norway, far more than for VHF and UHF systems, and gradually along the southern coast and in west Norway. The service is new and more base stations will be set up gradually as experience and information regarding the traffic basis are obtained, Sliper says. Reports from customers regarding difficulties in individual areas will also be very useful for further development of the system. The system will be expanded in central Norway in 1984 and in north Norway in 1985.

Information Chief Bugge Hjorth is able to relate that the Telecommunications Service now wishes with a deliberate price policy to orient users toward the new NMT system, since there has been increasing difficulty with getting through with traditional mobile telephone systems. With the NMT there are also opportunities for special services such as screening, transferring and short number selection. The computer automatically locates the mobile customer when he moves to a new area of coverage.

8985

CS0: 5500/2529

PROBLEMS OF EXPORT OF TV PROGRAMS TO CANADA DISCUSSED

Paris LE MONDE in French 23 Oct 82 p 27

[Article by Annick Cojean: "T.V.F.Q.99: Patchwork or Voice of France?"]

[Text] From our special correspondent--Montreal--Strengthen cultural cooperation between France and Canada, expand the French language audiovisual range, and introduce more reciprocity in exchanges between the two countries: these are the major topics of the meetings held this week in Paris, between the Canadian minister of communications, Francis Fox, his French counterpart, Georges Fillioud, the minister of culture, Jack Lang, and several high executives in the audiovisual field.

On Wednesday, 20 October, after having presided, with Mr Fillioud, at the launching of a televised series, "Indian Legends," produced by the French-Canadian screen writer Daniel Bertolino, a program that will soon be broadcast on Antenne 2, Mr Fox expressed the hope that the experience of the French language television network T.V.F.Q.99, which is presently limited to the Quebec Province, will be extended to the entire Canadian territory.

Created in 1979 by a intergovernmental cultural agreement, revised by the administration of Pierre Mauroy (in 1982) to include a reciprocity clause compelling the French networks to buy a minimum of 100 hours of Canadian television productions each year, T.V.F.Q.99 is a French program distributed by cable and supplied exclusively with a selection of broadcasts originating from the three French networks. It is an unusual channel, less controversial today in its basic principle than in its means and content.

To land in Montreal, rush to the TV set of a hotel equipped with cable, and feverishly punch the buttons of the remote control, is a normal reflex on the North American continent. To juggle among the 20 channels and lightly go from Radio-Canada to Telemetropole, from Radio-Quebec to the public TV channel or to CBS-Burlington, and then to stop at T.V.F.Q.99, the French channel, is an amusing game for a European. But to find, from Montreal to Lac Saint-Jean, and from Gaspesie to the Laurentides the rowdiness of "The Right to Answer," the mugging of Jacques Martin, and the news program FR 3-Languedoc-Roussillon, is definitely amazing and even surrealistic.

Each week, several dozens of videotapes leave Roissy for to Montreal, where, the Company for Editing and Recoding TE (SETTE), converts the programs (the Canadian transmission system being different from the French one) and then sends them to cable distributors. Since at least 900,000 homes are equipped with cable, about 2.5 million people receive T.V.F.Q.99, according to a study conducted in 1981. Half of them stated that they view at least three hours per week: proof that there is indeed an audience with expectations to be met.

And yet, there has been no lack of criticism about this operation, started jointly on 16 September 1979 by the Quebec prime-minister, Rene Levesque, and by the French minister of justice, Alain Peyrefitte. Artists and intellectuals were wary of what they began to see as "cultural colonialism," while the Union of Artists denounced the "disloyal" competition of French television, and the "cowardice" of the Quebec government for being incapable of fighting the massive penetration of the American networks without help.

Today, the opponents have quieted down. T.V.F.Q.99 is now a part of life; it has even drawn some of the audience from other media by providing viewers with programs they look forward to: "Apostrophes," scheduled one month after its French showing, whose advance announcements at bookstores are often the occasion for special displays; news magazines; medical broadcasts; as well as "Screen Files," "Theater Tonight," or "School for Fans," whose success has engendered the creation of its equivalent on a Montreal private network.

The programming as a whole nevertheless still disappoints a large part of its potential public, saturated with standard fare and tired of hearing each evening the regional weather report for the previous two days! Inadaptation? "Imperfections," answers Jean Rouilly, deputy director for international and commercial affairs at Antenne 2, explaining that the lack of choice in the proposed programs--despite his efforts to diversify them--and the sometimes disastrous delay in their broadcast, are the result of three major obstacles.

Priority of Large Networks

First, there is the problem of authors' rights, which forbid the transfer of co-produced programs without agreement from the partners; they also exclude most works of fiction, since authors are not eager to receive royalties that are definitely lower than those they can logically expect from the other large networks (an hour of fiction is paid about 36,000 F on Radio-Canada, and 2500 F on T.V.F.Q.99). The authors therefore ask that priority in the sale of their products be given to Radio-Canada and Radio-Quebec, and expect them to be programmed on T.V.F.Q.99 only when all possibilities for a "better" outlet have been exhausted. This is an attitude that has given the French channel the reputation of "the network of unsalable goods."

However, the French networks are saying that "what matters is to offer maximum exposure, and therefore the largest possible audience, to any television production, which is often sentenced to oblivion. The authors should not forget the role that T.V.F.Q.99 can play as ambassador of French culture, and the large benefits that can eventually be expected in many areas such as books, records, and movies."

The doubled sales of French productions at Radio-Canada and Radio-Quebec, observed in the first year, has raised some hopes. Is it chance, heightened awareness of France's products, or the performance of the network's sales services?

Associated with the nature--originality--of T.V.F.Q.99 and the causes of the time delays for broadcasts, are technical problems. The broadcasts are selected in France by each of the networks (as recommended by Quebec); they then have to be copied, copyright releases have to be checked, the tapes have to be shipped, and upon arrival in Quebec, they have to be recoded, programming has to be formulated, announcements have to be made in the Quebec press, and so on. All these operations involve a minimum delay of three weeks, and more likely two months, making it futile--not to say ridiculous--to attempt broadcasts that cover current events.

Quantity or Quality?

Lastly, SETTE encounters serious supply difficulties in satisfying the demands of ambitious programming (2500 hours per year, or seven and one-half hours of original daily programs rebroadcast one week later at a different time). In fact, the exhaustion of the French networks has recently led them to call upon the National Audiovisual Institute, keeper of the television archives. A total of 2500 hours is a lot, too much probably, as the networks unanimously deplore. "We have bet too heavily on quantity, and not enough on quality," states Roland Nguyen, head of FR 3's commercial services. "We will never beat the Americans at their own game. Why not counter the tides of images that flow from the United States, with a more restrained, but more varied and higher quality programming?"

"2500 hours are not only difficult to supply, but also cumbersome to manage," adds Marie-Christine Grollemund, head of TF 1's commercial service. "The total amount of 1.5 million Canadian dollars that we receive equally from the French and Canadian governments, not only allows us no profits, but also ties our hands with respect to the authors and actors who have the unpleasant feeling of seeing their work sold at rummage prices!" The essentially cultural nature of the Franco-Quebec agreement does in fact upset the rules that usually prevail in purchases and sales abroad.

On the other hand, the Quebec private companies that have joined SETTE, have profited from the massive introduction of French programs, and have thus increased the number of their subscribers. "Is it not unfair," observes a financial specialist at TF 1, "that the French networks, which must also show a commercial profit, are subsidizing the Quebec private companies?"

"The system is imperfect," admits Jacques Thibau, director general for cultural relations at the Ministry of Foreign Relations. "But no one would think of questioning the principle of this cultural cooperation, which Canada in fact would like to see expanded. What is important today is not so much the programs that we send on the Quebec cable, as the pictures the Canadians will send us from now on. The introduction of the notion of reciprocity is fundamental. It discloses both a new sensitivity and new priorities in cultural cooperation."

This should satisfy the governments of Quebec and Ottawa, who are anxious to finally see a concrete fulfillment of this idea of reciprocity.

And it should also create a few difficulties for those responsible for network programming and production units. To be sure, no one is questioning the new clause, but the means for its application are far from having been defined. Various agreements had earlier been reached on both sides. Guy Thomas, former president of FR 3 went to Quebec in person during the year; TF 1 points out the purchase of serials (televised version of Plouffe); and Antenne 2 plans several large productions (Louisiana, The Blood of Others, The Tomcat, and so on).

"What better system than co-production to illustrate this notion of reciprocity," asks Jean Rouilly, "than to work together on a project, complete it jointly, and adapt it for our viewers."

While reciprocity conceived within the specific (symbolic?) framework of the "Canadian hundred hours" has not yet been really studied in France, it has been enthusiastically received by the Ottawa authorities. It is after having mentioned this principle that Mr Fox announced the project to expand T.V.F.Q.99 not only in New Brunswick or Ontario as planned, but in the entire Canadian territory as well. With its available satellite relay and a cable network that services 60 percent of the households, Canada already has the necessary infrastructure.

This is the first time, it would appear, that a country is exporting its television production as massively and systematically as that. Is it a window open on French culture? And which culture is involved?

11,023

CSO: 5500/2536

PHONE-LINE NET EXPECTED TO BE COMPLETED AROUND COUNTRY BY 1984

Reykjavik MORGUNBLADID in Icelandic 29 Oct 82 p 8

[Article: "Great Increase in Phone Connections With the State and Reykjavik Municipality Computer Center"]

[Text] The number of customers of the State and Reykjavik Municipality Computer Center [SKYRR], who want to be connected with the Center's computer system through telephone lines and maintain so-called out stations, is constantly increasing and is already well over 100 in all. This information appears in the center's latest newsletter.

The newsletter states further that, as an example of the extent of the teleprocessing, these customers call for information or send information about 500,000 times every month.

Places outside Reykjavik which already are connected with SKYRR through telephone lines are Akureyri, Keflavik, Kopavogur and Hafnarfjordur. Soon, telephone lines to the Vestfjords, Snaefellsnes, Akaranes, Borgarnes and to the southeast will be added to the system. At the turn of the year 1983, a phone-line net for sending and receiving will be in place all around the country. This phone-line net will, among other things, reach all State Collecting Offices; the State Vehicle Supervision Office; all tax offices; the offices of the State Real Estate Assessment Board and many other institutions.

Even though teleprocessing has now become an important part in the operations of SKYRR and is increasing rapidly, the greatest amount of the data processing itself still takes place within the walls of the center itself. Various reports, accounts, payroll cards and many other things are calculated and produced at the center in great quantities. As a measuring stick of the extent of the processing in this field, it can be said that the monthly turnout corresponds to 30 million lines of reports and other documents.

9583

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MINISTER DISCUSSES GOVERNMENT POLICY ON CABLE TELEVISION

Oslo AFTENPOSTEN in Norwegian 28 Oct 82 p 3

[Article by Morten Malmø: "Cable TV 'Free,' Not Monopoly"]

[Text] "In the future cable TV must be made available also to others than the owners of the network. It would not be rational to place several parallel networks in the same district," said Culture Minister Lars Roar Langslet in the Storting [Parliament] yesterday. He thought it natural to consider licensing stipulations which ensure the community opportunities for opening cable transmissions up for others, too, in addition to the owner.

The cabinet minister further made it clear that it is not desirable to have the development of a series of local monopolies, especially not in a situation in which loosening up of the monopoly is a goal which is gaining steadily greater support. As far as licensing stipulations are concerned, Langslet stressed that consideration should be given to whether other parties than the owner should not be guaranteed rights for arranging for transmission--over already existing cable systems, too.

Langslet's move in the Storting yesterday came when he answered a justified question from Tom Thoresen (Labor Party, Østfold). Thoresen wanted to know which guidelines the Culture Ministry is working under in order to ensure that licenses for experiments with local cable TV can be used in a free manner so that ownership rights for cable networks will in reality be decisive for drafting and utilization of the licenses which the ministry has issued.

"Possession of the cable network itself can already in the experimental period result in a real lead," believed Thoresen, and he referred to the Janco cable company which the first time around had its application for a license rejected but which got it in the "second round," because it was not possible for Janco and Stovner-Groruddalen Lokal-TV [Local TV] to reach an agreement regarding sharing the license. The local company had gotten the license, that is, but was dependent on Janco's cable network.

The culture minister stressed that all those who now have gotten permission to engage in experiments do not have a right to extended permission over and beyond the experimental period.

"The cable development which has taken place over the years has been regarded as a technical installation, e.g., for arranging for Swedish television--and has not been evaluated in the broader media policy context. In the future I think everyone will be sorry that we were not far-sighted enough," said Culture Minister Lars Roar Langslet.

8985

CSO: 5500/2529

INTRODUCTION OF ADVANCED-TECHNOLOGY PHONE ANNOUNCED

Oslo AFTENPOSTEN in Norwegian 29 Oct 82 p 18

[Article by Erik Bjørnskau: "Pushbutton Phone: New Customers Get Telephone Set of the 80's"]

[Text] Things have gradually quieted down somewhat with regard to the Telecommunications Service's new telephone set--the pushbutton phone. After the big sales campaign in the early summer now business is continuing in a more normal manner. But still some time in the future it will be necessary to reckon with individual capacity problems when the set is installed in the telephone system, which is characterized by both older and modern equipment. The expansion of computer-controlled telephone exchanges is, however, taking place continuously in order to be able to offer steadily more customers a better telephone.

Since the pushbutton phone was launched in an experimental project in four cities--Oslo, Drammen, Bergen and Ålesund--today in just the Oslo telephone district about 11,000 to 12,000 customers have the new pushbutton set and now 1500 sets are sold each month, reports Telecommunications Chief Finn Jahren.

Two versions of the pushbutton phone exist. One, the tone dialing model, is an advanced small computer terminal which, when used with a computer-controlled telephone exchange, to begin with can perform a whole lot of new additional services for the customer. They include programmed transfer of incoming calls to another party number, controlled screening, automatic waking or alerting, and programming of so-called short numbers, the ability to simplify long often used numbers to a personal code.

The other model, which is called a decade model, is basically just a more up-to-date version, on the outside, of the traditional telephone set, but a call is in principle "set up" in a faster manner.

Up to now the Telecommunications Service has offered just the advanced tone dialing model in which signal transmission is based on tones and not on electrical pulses as in other sets and, of course, only to customers whose line is connected to a DMS [computer-controlled] exchange, a so-called 10 C exchange in the Oslo area. These exchanges exist now in Furuset, Fagerborg and Frogner, among other places, where they control sections of customers' lines which belong to these exchanges. Therefore, it is necessary also to have the "right" number in order to be considered.



The pushbutton phone comes in six colors with a replaceable cover and represents a major advance in modern telephony.

As far as the real opportunity for these customers to order the special services named is concerned, being able to guarantee that the computers in the exchange have sufficient capacity has been a problem. At the moment chances exist for some of these services being sold out, but the Telecommunications Service is continuously working on expanding the computer memories in current exchanges so that gradually more will be able to order these services if they wish to.

The decade version was not offered at the same time since earlier this year there was some doubt whether these sets would "harmonize" with the older exchange types. Therefore, in the Oslo telephone district an experimental project using 1000 sets was initiated just to find out whether it was possible to offer customers in all areas the new set. It is possible, and new customers will be able with an additional payment of about 250 kroner to use the pushbutton phone instead of the usual dial model from 1967, regardless of the exchange connection, Telecommunications Chief Jahren is able to state.

At the Telecommunications Directorate Information Chief Christian Bugge Hjorth reports that the intent is to replace all dial sets from before 1967 as quickly as possible. Production of the 1967 model will also be stopped but as a substitute for the pushbutton phone the Telecommunications Service will keep the older model which will be able to be offered in a reconditioned state to customers who still might want a traditional set.

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CSO: 5500/2529

TELECOMMUNICATIONS AGENCY CHIEF DISCUSSES ADVANCES, POLICY

Oslo AFTENPOSTEN in Norwegian 29 Oct 82 p 26

[Article by Knut Løvstøl: "Let the Telecommunications Service Loose; We Will Compete!"]

[Text] "The Telecommunications Service has been given the responsibility for a development without having complete control of the means." The long-drawn sigh comes from General Director Kjell Holler and holds the feelings he has for the difficult-to-handle and often hindering public control which the service is exposed to. Being part of the State budget imposes strict limitations on the Telecommunications Service's economic elbow room while the ministry and the Storting [Parliament] have a tendency to mingle too much in daily operations. For the Telecommunications Service this is a hindrance in a time when it is becoming more and more obvious that it will encounter competition from private industry in fields where the service up to now has lived a monopoly-protected life. Old walls stand to tumble.

Now, however, it can seem that there is a dawning political determination to loosen up somewhat on the reins which the authorities today hold in a knuckle-whitening grip. In a panel debate recently, in which the Telecommunications Service's situation was the main topic, Communications Minister Inger Koppernaes admitted that there is too much detailed regulation of the service on the part of the ministry and Storting.

"It will be to the society's advantage for there to be a loosening of the ties," the cabinet minister said, who suggested an arrangement whereby the Telecommunications Service can work freely within the framework of responsible goals set by the authorities. However, she did not want to give her direct endorsement to the idea of a telecommunications service corporation, which has been suggested a number of times.

"There are several stations in between to get off at between today's Telecommunications Service and a government corporation. For example, it is possible to imagine the Telecommunications Service, in cooperation with others, establishing corporations in fields which will be especially exposed to competition. An example of this is NSB [Norwegian State Railways] and the establishment of Linjegods [for freight shipping]," said Cabinet Minister Koppernaes. Besides, she alluded to the fact that a committee should be established immediately to study further the service's association with the administration system.

Foreign Giants

In the course of a couple of years the Telecommunications Service should have established two corporations which can offer multinational telecommunications and data transmission companies competition here at home in cable TV and in the industrial communications market. This is the opinion of Research Chief Jan E. Engebretsen at the Telecommunications Service's research institute. The markets in our parts are only in their tender beginning, but will quickly put on speed when the TV satellites are above us and as a result of the persistent fusion of telecommunications and data technology.

Research Chief Engebretsen does not for a moment doubt that Norway is included in the multinational corporations' strategic planning to secure for themselves larger shares of the market and therefore the Telecommunications Service should be prepared the day the offensives begin with full force.

"If not, we will soon find ourselves in a situation in which foreign giants control the market here at home both as far as hardware and software are concerned. This will hinder the flourishing of a Norwegian home industry in this tremendously important field," he believes. In order to stand prepared, therefore the Telecommunications Service should use the next couple of years to place itself in a new and expanded role, especially in connection with industrial communications, but also as far as cable TV is concerned and new services for the household market. The proposed corporations should include, in addition to the Telecommunications Service itself, Norwegian data transmission and telecommunications industries. They will operate as independent entities while another part of the service continues to manage and operate the public telephone system. This administrative agency will in addition—according to Engebretsen's model—be in charge of standardization tasks and type approval of equipment which is to be connected to the public system.

Cable TV

As far as cable TV is concerned—or cable equipment which relays television programs from common antennas or local program sources to several receivers simultaneously—it is the Telecommunications Service's expressed goal to be included in the competition for this market. As General Director Kjell Holler says, "We are going to step up our action in this field. The day satellite signals with TV programs from large sections of Europe descend over our heads the need for cable TV will come with full weight over the whole country. Then the Telecommunications Service will be included, both in terms of hardware and marketwise, in the competition with private suppliers. However, the service will let the software side be."

While the Telecommunications Service's role in cable TV until recently has been limited to administration of regulations for this equipment, it is now engaged in experimental development in a number of places. This includes in Skien, in Trondheim and at Jevnaker. Other current tasks for the Telecommunications Service are establishment of a trunk network for joining together local cable systems and establishment of ground stations to receive and broadcast satellite signals.

Pushbutton Telephone, Telefax

The last couple of years have been a hectic time for the Telecommunications Service. Over the course of last year the new "Tastafon" pushbutton set was introduced to users as the "Telephone of the 80's." Connected to computer-controlled telephone exchanges, the pushbutton telephone offers a number of new services and the Telecommunications Service aims gradually to develop more advanced versions of the set. The Telefax service was also introduced last year--a system for transmission of written information and documentation over the telephone system. In addition, Telefax is the first service which the Telecommunications Service is offering on the market in competition with private suppliers. With the equipment it is possible to transmit an A 4 page in three minutes with today's models and one of these days a digital Telefax set is coming with a transmission speed of about one minute.

The Scandinavian Datex data transmission network was opened in 1981 and will be marketed by the Telecommunications Service as the primary data transmission offer for the 1980's. "Fonoteleks" also arrived, a service which makes it possible to send and receive Telex messages without having your own Telex equipment. Last year also saw the start of the Scandinavian automatic mobile telephone, which is in operation today over all of southern Norway. The system will be completely developed over all of Scandinavia in 1985. A supplement to the Scandinavian mobile telephone can come around 1990, making it possible to transmit written messages and data traffic in addition to conversations.

Ship Communications

Of the Telecommunications Service's big events for this year it is possible to mention the opening of the world's first coastal ground station for totally automatic satellite communications to and from ships. The station is at Eik in Rogaland. While the Eik station today covers the Atlantic Ocean region, in a few months the antenna will be turned around to communicate via a satellite over the Indian Ocean. A cooperation agreement has been entered into with Great Britain which will cover the Atlantic Ocean and with Singapore which will cover the Pacific Ocean, so that before long Scandinavian shipping will be ensured global satellite coverage.

In June NRK's [Norwegian Broadcasting System's] new broadcasting equipment for short and medium waves was put into service at Kvitsøy in Rogaland, the largest broadcasting installation in the Telecommunications Service's history. When the Kvitsøy transmitter is put into service permanently over the new year it will considerably improve the opportunities for Norwegians abroad to listen to the "Voice of Norway."

Digitalization

Let us let the summing of recent events end with this, although a lot more could be mentioned. Now the Telecommunications Service is confronting a new epoch--a time characterized by the rapid introduction of computers into telecommunications technology. For example, in the years to come the telephone system here at home will be digitalized and recently a request was made for bids for digital telephone exchanges with a total of 500,000 automatic numbers. For the first time bids for heavy telephone equipment will be obtained internationally and a reply is expected from six firms before the end of the year. They include the traditional

Telecommunications Service suppliers Elektrisk Bureau [Electric Bureau] and Standard Telefon og Kabelfabrik [Standard Telephone and Cable Factory], as well as Philips (Netherlands), Northern Telecom (Canada), Nippon Electric Co. (Japan) and CIT-Alcatel (France).

It is the government which decided that bids for the digital telephone exchanges are to be obtained internationally and the decision has aroused protests in a number of quarters, not least among the traditional suppliers, who fear a strong decline in the telecommunications industry here at home if a foreign company gets the order. However, it is the government's view that if Elektrisk Bureau and Standard Telefon og Kabelfabrik put their hearts into it and get full support from their foreign parent companies they should--with their extensive local knowledge and market--be in a good situation in the competition. One of them should be able to get the order. The same view has been unofficially expressed by some people in the Telecommunications Service: If neither EB nor STK manage to land this order it will be a confirmation that it was right to go out internationally, it is being said.

It is last of all the Storting which is to decide which of the six firms is to get the order for the digital equipment for further development of the telephone system here at home on the basis of a recommendation from the Telecommunications Service which is to be ready before 1 August of next year. Authorization to order the equipment is expected by next fall.

It is with great suspense that the Telecommunications Service is looking forward to the Storting's handling of this matter, for the outcome is very unclear. There is no potential majority in the Storting either for or against ordering abroad. What some in the service fear can happen is that a foreign firm will come with the best bid but that it will be passed over by the Storting in favor of a Norwegian bid "for employment reasons." Then the international telecommunications industry will put a big question mark beside the Telecommunications Service's objective in going out and asking for bids and such a reaction is what is least of all desired. Such a decision will seem especially incomprehensible when it is clear that both EB and STK will have to reduce their staff at the telephone exchange end regardless of the outcome of the current matter. It is also a condition on the part of the authorities that any foreign firm which happens to get the contract will have to commit itself to building up operations here at home, which will provide at least as much employment as if one of the traditional Telecommunications Service suppliers should get it. Any foreign firm will also have to build up extensive system competence in Norway, so that the Telecommunications Service has expertise easily available.

Postfax

The years to come will also see an expanded area of competition--perhaps a merger--between the Telecommunications Service and the Postal Service. Already today there is an example of fusion of the two services' previously so distinct services, i.e., Postfax. This is a public telephone copying service which the Postal Service and Telecommunications Service have established together. In a few minutes it is possible to transmit documents, letters and drawings over the telephone system from a post office or a telephone office which has Telex equipment. The receiver can himself pick up the message or it can be sent as express mail from the receiving station. The so-called tele-word-processing service which is in the process of

introduction by the Telecommunications Service will make it possible to write out a document on a word processor and transmit the document over the Telecommunications Service's lines to another word processor. Another competitor for the Postal Service. When Teledata arrives, users will be able to access information in central data bases by means of a telephone and TV set and have the information presented on the screen at home or at the office.

According to Communications Minister Inger Koppernaes it is possible to count on rapid technical development in the telecommunications sector which will be able to influence the Postal Service's offering of services and which to a great extent will be able to change competition conditions for the traditional postal services.

The Telecommunications Service and Postal Service are thus cooperating on the Postfax service. Together the two services see opportunities for implementing an electronic postal service. Progress is rushing forth to such an extent that it is impossible to disregard the fact that with time we will see the two services merge into a common institution such as there are many examples of abroad.

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